Successfully Developing a Mixed Methods Research Proposal

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What Makes a Successful Mixed Methods Research Proposal Especially Tricky?

Pros: For many reasons, a mixed methods approach can add considerable strength to an inquiry, especially because it is usually proposed for complex, compelling questions.

Mixed methods can be methodologically innovative, and this is highly valued by many funders.

When done well, this can deliver double impact – deep questions, and elegant methodological solutions.

What Makes a Successful Mixed Methods Research Proposal Especially Tricky?

Concerns: Mixed methods studies require detail to describe successfully, and require diverse expertise from audiences such as reviewers.

Mixed methods can introduce complexity (more time, resources, logistics, investigators), and the benefits versus costs are not always persuasively communicated to diverse reviewers, even those who “get” mixed methods

Strategies for creating a persuasive mixed methods proposal

Overall, the use of mixed methods must be persuasively justified.

State an overall goal that addresses the overarching research problem or question, and state why a mixed methods approach is needed.

Mixed methods inquiry is most persuasive when goals discuss understanding multiple levels of influence on a problem, and the need for both inductive and deductive inquiry, in tandem.

Writing Specific Aims for a Mixed Methods Research Proposal

As in any study, the methods proposed must be appropriate for the specific aim they are asked to address.

A mixed methods study may have one or more aims addressed by quantitative approaches, one or more addressed by qualitative approaches, but should have at least one specific aim which can only be addressed with mixed methods.

Ordering the Aims to be Congruent with the Research Strategy

Aims that are to be addressed concurrently can be prioritized by importance.

- To assess treatment outcomes using an experimental design.
- To assess the treatment process using qualitative data collection, embedded within the experiment.
- To understand the outcomes within the context of the treatment process, by integrating the data using mixed methods analysis.

Ordering the Aims to be Congruent with the Research Strategy – con't

Aims that are to be addressed sequentially can be described in chronological order.

- To understand the cultural context of a phenomenon of interest.
- To develop a culturally competent instrument based on the initial qualitative findings.
- To assess the phenomenon of interest in the target population, using the new instrument, and conduct quantitative statistical analyses of data collected with it.
- To interpret results of structured analysis within the context of the qualitative findings, and contribute mixed methods findings to the issue.

Significance

Review the field to date and the methods used.

When identifying gaps you may address, explain why a mixed methods approach may be needed.

Emphasize why your study will add new tools as well as information, in the specific scientific or health area you are addressing. How can future research benefit from your methods, as well as your discoveries on the science questions?

Research Strategy - Innovation

Mixed methods, by itself, is not likely to be seen as innovative. (Price of popularity!)

However, in a specific problem area, using mixed methods may be uncommon thus far. Or mixing specific types of methods, in your proposed way, may be new. A novel approach that is useful but previously untried, and just the right way to move the field, is innovative!

In addition, methodological contributions may be innovative if they use mixed methods in specific ways, result in new tools or techniques, or have other innovative aspects.

Research Strategy - Approach

Introduce both mixed methods as an approach, and also your specific mixed methods design

- Provide a definition of mixed methods
- Cite studies, in areas related to your work if possible, which have used mixed methods.
- Name the design being used, and reference the terminology. Use one terminology consistently (if possible, acknowledge other terminologies exist.)
- State reasons for your choice of design, and link it back to your overarching problem or question.

Approach

Organize your approach to match your aims!

Choose an order that matches your design, either sequential or concurrent

Establish the rigor of your quantitative methods

- Data collection and analysis

Establish the rigor of your qualitative methods

- Data collection and analysis

Balance your sections, by priority of aims

Explicitly state how/when integration will occur

Include a clear time line of all activities

Sometimes a schema is helpful

Appendix from our NCI-funded mixed methods R21 “Eating for Life: Dietary Behaviors Among Long-Term Cancer Survivors” K. Smith, PI

Mixed methods study to 1) explore adult cancer survivors' eating practices and 2) how cancer shapes their self concept and readiness for behavior change in order to 3) generate hypotheses for effective and sustainable dietary interventions.

Data Integration and Dissemination Guide

Purpose	Approach	Data Collection	Expected Outcomes
Aim 1: Identify how dietary issues & dietary modifications for long term survivors are approached by health care providers Q1: How do health care providers describe diet and dietary change as part of current care practices for long term cancer survivors? Does this differ between provider or cancer types? (and other questions)	Key Informant Interviews with health care providers	**Total participants** = 30 **Settings:** **Provider Types:** **Recruitment strategy:** Purposive selection **Timeline**: Months 3-6 **Analytic approach:** qualitative, iterative, thematic analysis. Constant comparative approach	Insight into dietary issues that are seen as important by clinicians **Journal publication on providers' views on dietary change** Domains of treatment experience , dietary domains to be explored in prompted discussion of diet with survivors Feedback to Advisory Board and stakeholders **Insight into feasible intervention partners, settings, etc**
Aim 2: Describe and compare how dietary issues fit within the daily life experiences of survivors of 3 types of cancer (breast, prostate and non Hodgkin lymphoma). Q3: How does the experience of cancer shape long term survivors' identity? Q4: How do participants' social, cultural and familial surroundings as well as their cancer histories shape their dietary behaviors?	Targeted life history interviews with long term cancer survivors Structured surveys with socio-demographic, tobacco exposure and physical activity items	**Total participants** = 60 (30 men & 30 women) **Cancer types**: Breast (n=20), Prostate (n=20), non Hodgkin lymphoma (n=20) **Recruitment strategy**: through clinical settings **Instruments**: See appendices 3 & 4 **Timeline**: Months 3-14 **Analytic approach:** Narrative analysis, thematic analysis and quantitative descriptive analysis	Identification of commonalities in treatment and survivorship experiences **Journal publication on cancer history and survivor identity – comparison between 3 cancer types.** Summary of the holistic context for each survivor's dietary data, including physical activity and tobacco use (collected as part of Aim 3) **Insight into personal, familial and cultural context for current dietary behaviors and potential intervention strategies**
Aim 3: Triangulate conceptualizations of diet and behavior change, and actual diet, between survivors of different cancers/stages and survivor identities. Q5: Are cancer survivors meeting cancer prevention dietary recommendations? Q6: What barriers and opportunities for intervention are indicated through dietary patterns of survivors?	ASA24 dietary recalls Prompted dietary discussions	**Survivor participants** – see Aim 2 **Data produced:** (up to) 3 dietary recalls/1 prompted dietary discussion for each survivor **Instruments:** To be developed as part of the project **Analytic approach**: Recall data to be analyzed using quant (nutritional value) and qual. (meal and dietary composition) data; thematic and comparative analysis of discussion data. **Timeline:** Months 4-20	Initial analysis (quant and qual) of dietary recall data to provide prompt materials for dietary discussion (contact 5) Identification of common dietary problems or deficiencies for intervention development **Journal publication on dietary patterns of cancer survivors using quant., qual and mixed methods analysis** Feedback to Advisory Board, local survivor and clinical stakeholders
Aim 4: Combine survivor and health care provider data to generate hypotheses for future interventions. Q7: How do survivors prioritize co-morbidities, recurrence and quality of life when making dietary choices? Q8: How do survivors engage with dietary data? Q9: What are potential interventions for effective dietary change?	Key Informant Interviews, Life history interviews, Structured surveys, Recalls, Prompted discussions	**Key informant and survivor participants** – see Aims 1 & 2 **Timeline:** Months 18-24	Identification of potential provider stakeholders for intervention development Compare and contrast provider and survivor conceptualization of importance and feasibility of dietary change. **Journal publication triangulating provider and survivor data** Inform planning of intervention, and generate ideas for stakeholder/research team planning. **Submission of R01 dietary intervention trial**

How will you handle the unexpected?

- Is your time line realistic for mixed methods? What about delays?
- How will you validate your activities and decisions as you go along? What are your time points for re-evaluation?
- Who has primary responsibility for each piece, and how will the key players interact, and work together?
- How do the sequential pieces build, and how vulnerable are the later pieces to earlier unexpected events? How will you address unexpected issues?

Beyond the Research Plan – Other Critical Proposal Elements

- Abstract and Title:
  - Identify the use of mixed methods, if not in the title, then throughout the abstract
  - Connect the methods to the aims
  - Refer to the ways in which integration will occur

- Human Subjects:
  - Be prepared to educate IRBs and reviewers on both qual and quan human subjects issues, as well as those introduced through mixing.
  - This includes repeated contact, loss of anonymity, in-depth multi-faceted data protection issues (videos plus surveys).

Facilities and Resources

Institutional Environment

- Tangibles – software, computers, meeting rooms, structural support for team science

- Intangibles and culture- evidence of support for this type of work, a place where mixed methods can thrive – journal clubs, students, training, coursework, reputation, prior leadership.

If these are areas where you are building capacity currently, how will the grant leverage that? Will you access other expert resources to create your own capacity? What will be sustainable after the grant is finished?

Biosketches – Do they tell the right story about your proposed work?

For Individual Investigators:

What is your previous training, and team work, in mixed methods? If you have not done mixed methods before, what do you bring in terms of team work and ability to work across disciplines? What multi-disciplinary teams have you previously been successful on? What specific role will you play in this proposed team?

For the Final PI/Team Review:

Do all the bios taken together have a clear team process that could be mapped out? Are the leaders and teams for each task clear? Overlap? Gaps? Balance? Synergies that are based on prior success? Publications and prior awards of relevance to all proposed goals?

Budget and Budget Justification

Personnel Roles – Balance, Gaps, Duplication – (see biosketches)

Does anyone – including staff – need training? What about new updates across the project?

Costs, timing, travel – Resources for team to spend sufficient time together to insure mixing is maximized.

Sufficient time and effort to get integrated analysis and interpretation accomplished.

Software, technical resources, no gaps!

Conclusions

- Reducing the “Trust Me” Factor

A grant proposal cannot teach or even fully explain mixed methods to someone who has no prior background in it.

However, a strong proposal can convince that person that you are an expert, and are using accepted standards and best practices.

Conclusions

Tie all elements of your approach back to your goals and questions.

Provide references for all your methodological statements and decisions.

Especially for sequential designs, lay out when key decisions will be made, and how – limit the unknowns!

Describe a non-static, flexible infrastructure of both human and environmental resources, to show how the science will be produced, and fully realize its potential contribution to the field.

Additional Resources

Creswell JW, Klassen AC, Plano Clark VL, Smith KC for the Office of Behavioral and Social Sciences Research. *Best practices for mixed methods research in the health sciences*. August 2011. National Institutes of Health.

http://obssr.od.nih.gov/mixed_methods_research